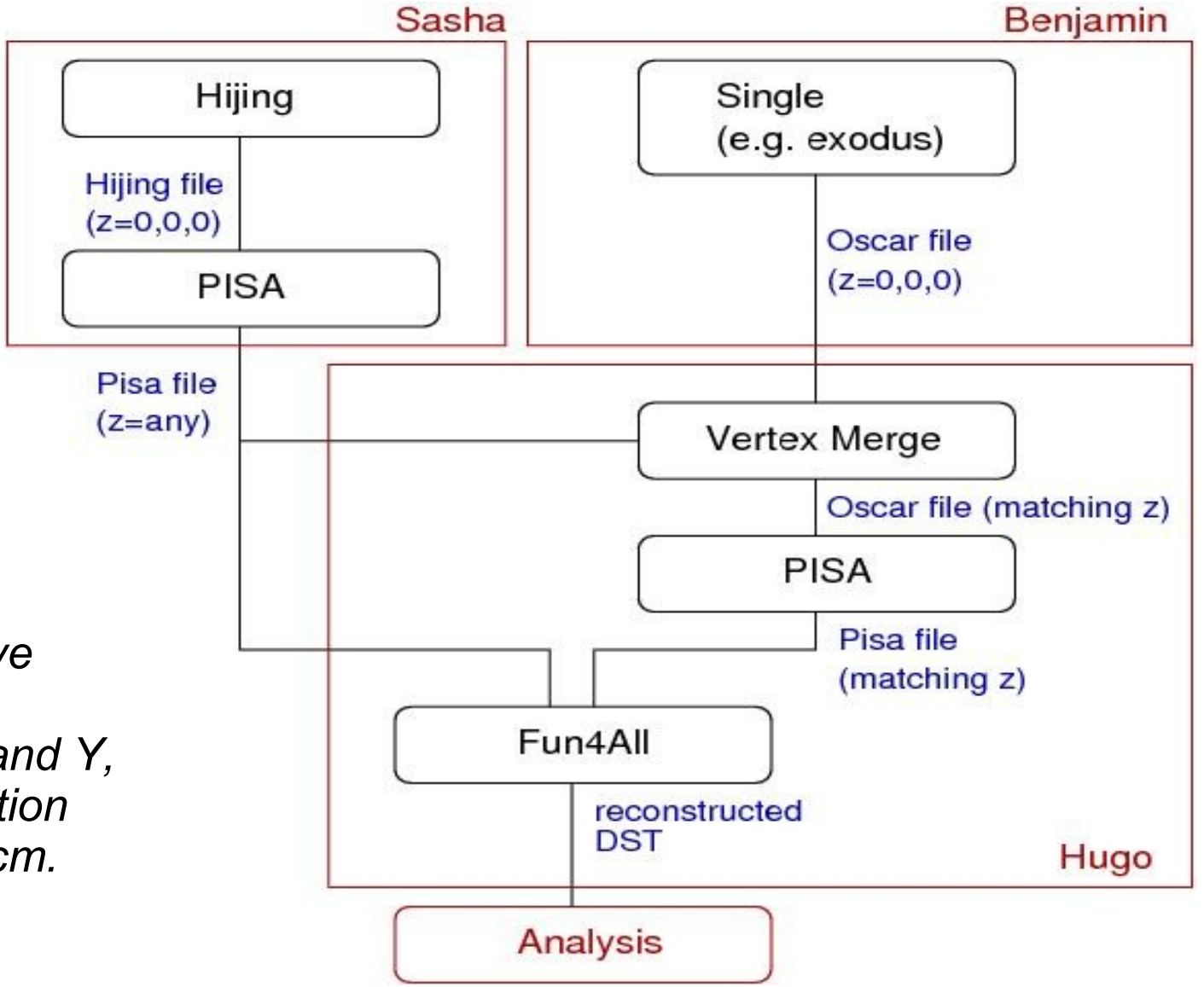
Blind analysis challenge for VTX/FVTX

My goal today is to ask for suggestions (how to make it more useful) and attract volunteers



Current plan is to have vertex smeared with 1mm Gaussian in X and Y, and have flat distribution in Z from -10 to +10 cm.

Signal

FVTX group plans to have single muon files, with muons coming from 3 different sources:

- charm/bottom decays (HERWIG)
- Direct thermal muons (EXODUS)
- Muons from Kaon decays

Amount of muons from each group will be unknown to the analyzers. Test signal files already exist.

For VTX I would suggest:

- electrons from D mesons (PYTHIA?)
- electrons from B mesons
- random single electrons and/or conversions

We need a volunteer to do it (Matthew Lockner, ISU)
Generate OSCAR files with at least one electron in Central Arm acceptance with (0,0,0) vertex.

Current status

- Testing the procedure. Simulation code ready.

- Generated 10k minimum bias Hijing events

- Processed ~2k events through PISA
  (this is the most CPU consuming part – few minutes per event)

- Hugo will test merging procedure with muon signal files.

- The goal is to make sure that everything works properly
  some time next week.

- Suggestions for improving the procedure are welcome!

- BAC meetings every week on Wednesday at 10:15am BNL time.
  - Axel, Melynda, myself, Hugo, Tony

Some other thoughts (not mine)

- With current approach the challenge will be done by perfectly calibrated detector.
  - introduce misalignments? (easy for VTX)
  - introduce dead areas? (easy for VTX)
  - something else? (suggestions are welcome).

- 'Calibrate' software first by analyzing data with known amount of signal, and then do a blind analysis.